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ABSTRACT

In the northern high desert region of San Bernardino County (California), about half of special education teachers do not hold special education credentials. In September 1988, the Desert-Mountain Rural Training Program began to provide appropriate training to uncredentialed special education teachers in this sparsely populated area. The program is a collaborative project between administrators of the local special education unit and California State University at San Bernardino. Program components include: (1) providing a minimum of 30 current teachers, over a 3-year period, with credentials as teachers of learning disabled or severely handicapped students; (2) identifying, developing, and supporting practice sites that are accessible to rural teacher trainees for observation and practica-based experiences; and (3) using technology in the training of current and future teachers. The competency-based credentials program is taught at sites in the desert-mountain region and consists of six core courses and six courses in specialist areas. Innovative features include a regional rural issues course and the incorporation of rural "mini-modules" into existing courses. Development of teacher technological literacy focuses on telecommunications, video programming, and interactive television. This paper contains 20 references. (SV)

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DEVELOPMENT OF COMPETENCY BASED CREDENTIAL PROGRAMS IN SOUTHERN CALIFORNIA'S HIGH DESERT REGION

The need for rural teacher training programs has been well documented. Delivery of quality education services for exceptional children in rural areas and the training of teachers to meet the unique needs of these students constitute a major challenge to special education (Chavez & Burton, 1987). Staff development, difficulties in recruiting and retraining qualified staff, and resistance of teaching staffs to change, are among the numerous problems faced by special educators in rural areas (Helge, 1984).

According to the Rural Special Education Quarterly (Winter, 1984), 33% of all students in the United States attend rural schools which make up 67% of all schools. Rural special educators face a wide variety of problems not faced in urban and suburban schools (O'Conner & Rotatori, 1987). Helge (1981, 1984) found staff development, difficulty in training and retraining staff, and resistance to change to be among the greatest problems faced by rural special educators. In a survey of 200 rural special educators, Helge (1984) reported funding inadequacies (74%), difficulties recruiting teachers (66%), and problems with retention (64%), to be major problems in providing adequate services to rural areas. In addition, only 17% of respondents stated they had an adequate number of special education personnel.

Personnel need training and support if they are to adjust to rural and isolated districts, yet few teacher training programs focus on rural issues and concerns. As a result there is an insufficient number of personnel with the necessary competencies and pre-service experience specific to rural special education (Horn, 1981; McIntosh, 1986).

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Marrs (1984) identified three types of prospective and practicing teachers who are likely to teach in rural special education programs: (1) those who grew up in the rural area, like it and intend to stay there; (2) those who have temporary certificates and were able to get special education positions in the rural area; and (3) those who have no interest in the rural area but have accepted an entry level position in the rural area until something else is available. Following a study of bilingual rural teacher needs, Chavez, Burton, and Lopez (1987) recommended active recruitment of teacher trainees who already live in rural areas and who wish to become certified and to teach in their home area. In addition, these researchers emphasized a need to increase credential course offerings in convenient rural locations and to provide incentives to teacher trainees in those areas.

The delivery of comprehensive education service to students in California is especially challenging. California, the third largest state in land area, has 156,299 square miles and a student population of over four million. One in twelve persons in the United States lives in this widely diverse region. Mountains, deserts, large metropolitan cities and widely separated rural communities constitute the varied geographic layout of California. In 1986, the school population included 63% non-Hispanic whites, 20% Hispanic/Mexican Americans, 8% blacks and 8% Asians (California 2000: A People in Transition). Three years later, California became the first state in the nation in which the historical majority had become the minority. Climate also varies greatly across the state and within regions, further diversifying economies and socioeconomic conditions. These various geographic and population circumstances create challenges to funding and problem solving for those who seek to serve all students in California public schools.

California is currently experiencing teaching personnel shortages with an estimated 80,000 new teachers needed by the year 1996 in order to maintain the already high (25 to 1) current class size. In addition, it is estimated that 40% of all California special education teachers may be uncredentialed for the area in which they are teaching (San Francisco State University: California Research Institute, 1988). Data gathered by the California Commission on Teacher Credentialing in 1987 revealed that emergency special education certificates were issued to 1262 teachers of learning and severely handicapped students. That same year the California State Department of Education reported a need for an additional 1,592 special day class teachers, 294 resource teachers and 176 itinerant consulting teachers to fill vacant positions.

San Bernardino County is the largest geographic area under one county government in the United States and is in the fastest growing region in California. Located in the southeastern section of the state, it is bordered by the states of Nevada and Arizona, as well as Orange, Riverside, Kern and Inyo counties. With a population of 1,188,000 and 20,160 square miles, San Bernardino County has a population density of 2.38 persons per square mile. The greatest concentration of people is in the city of San Bernardino, which has a population of 140,000. Areas east and north of San Bernardino are rural and sparsely populated with high and low desert areas and numerous mountain ranges. Many school districts in the high and low desert fit well within the definition of rural, as designated by the National Rural Research and Personal Preparation Project. According to that definition, a school district is considered rural when the number of inhabitants is less than 150 per square mile or when greater than 60% of the residents live in communities of 5,000 or less (Helge, 1983).

One hundred and nine (109) special administrative units serve the 497,627 handicapped students in California. One purpose of the development of Special Education Local Area Units (SELPAs) was to allow districts to group students together when the sparcity of schools and small numbers of students with handicaps prevented securing adequately trained staff for individual schools. As regions grow in population, new SELPAs continue to develop. The Desert-Mountain Rural Project is located in the northern high desert region SELPA of San Bernardino County and is one of four SELPAs in the county.

This SELPA alone comprises 18,000 of the 20,160 square miles of San Bernardino County. Slightly over 200,000 people live in the Desert-Mountain SELPA service region where there are 15 school districts. Whereas the rest of San Bernardino County averages 492 persons per square mile, the Desert Mountain SELPA region averages 11.5 persons per square mile. This low number of residents per square mile more than qualifies the Desert-Mountain area as rural, according to the Helge definition of 150 people per square mile. Included within the SELPA service area are a variety of geographic regions: the Mojave high desert area of Victorville and Barstow, part of the Coachella Valley low desert area of Palm Springs, and the mountain regions of Lake Arrowhead and Big Bear. Relatively large towns in this area include Victorville, Barstow, Hesperia, Needles, and Apple Valley. Of the 15 school districts in the SELPA, four have a total enrollment of less than 200. Most school districts in this SELPA have several small sparsely

located schools. For example, Baker School District has three schools with a total K-12 enrollment of 163 students.

California State University San Bernardino (CSUSB) was established in 1962 to serve the residents of San Bernardino and Riverside counties of California. The service area generally known as the Inland Empire, includes the 36th and 37th Congressional Districts and encompasses an area of 27,000 square miles. This vast region begins approximately 50 miles east of Los Angeles, stretches east to the Colorado River communities of Needles in San Bernardino County and to Blythe in the southeastern portion of Riverside County.

The Inland Empire is facing rapid growth with a projected growth rate of more than 19% through the 1990s and a current real growth rate of close to 20% over the past three years. The population of the region has increased from 1.6 million reflected in the 1980 census to 20 million in the 1987 census update.

Special education programs at CSUSB include three credentials and one certificate: Learning Handicaps (LH), Severe Handicaps (SH), Physical Handicaps (PH) and the Resource Specialist Certificate (RSP).

A faculty of five full-time special education instructors teach special education course work each quarter. In addition, the School of Education faculty teaches special education courses on a part-time basis, and a qualified adjunct faculty has been identified to teach specific content training needs of the service region.

At the time this project was initiated, SELPA strengths included: 1) emergency certificated, long-term substitute, highly qualified teacher aides and other pre-service teachers who live in the rural area and expect to stay there; 2) prospective teachers with a strong commitment to teaching in rural areas; and 3) prospective teachers and on-site administrators with practical knowledge of rural service needs and issues. Critical SELPA needs were: 1) trained/credentialed teachers of learning and severely handicapped students; 2) reasonable access to a university credential training program; 3) teacher training which incorporates the unique situations common to the rural area; 4) ongoing contacts with faculty from the university training program; and 5) a program which incorporates input from a wide constituency in the rural area to insure realistic and personalized training.

Strengths which the university brought to the project included: 1) faculty with knowledge, research basis and content of special education credential programs; 2) faculty with an understanding of general issues, problems and content of a rural training program; 3) faculty available for coursework and field supervision in an on-site rural training program; 4) faculty with a commitment to assisting rural schools in recruiting and training qualified teachers; and 5) well-established, state approved and highly professional competency based credential programs. In order to initiate the project, the university needed: 1) a convenient setting in the rural service area where courses could be taught; 2) an advisory committee to provide input from a wide constituency in the rural area regarding specific problems and needs; and 3) practicum sties for fieldwork courses and supervision in the rural setting.

COMPONENTS OF THE TRAINING PROGRAM

In September 1988, the Desert-Mountain Rural Training Program was initiated. This collaboration school-university project was developed in collaboration with Desert-Mountain SELPA Administrators and the SELPA Community Advisory Board. The Desert-Mountain Rural Program is composed of three major components. First and foremost, is the appropriate training of a cadre of uncredentialed rural special education teachers who currently teach learning and severely handicapped students in this region. The second component involves identification, development and support of practice sites which are accessible to the rural teacher trainees for observation and practice-based experiences. A third component establishes the use of technology as a means to train current and future teachers. Each of these components are discussed separately in the following sections.

PROGRAM COMPONENT ONE: TRAINING OF CREDENTIALED TEACHERS

Over a three-year period, a minimum of thirty current teachers are being credentialed as teachers of learning or severely handicapped students. The credentials of learning or severely handicapped students are consistent with the California State University San Bernardino (CSUSB) Special Education Teacher Credential in progress, which offers California Commission on Teacher Credentialing approved programs in the areas of Learning Handicapped, Severely Handicapped and Physically Handicapped, as well as the Resource Specialist Certificate.

The CSUSB credential programs are competency-based and are composed of six generic core special education courses and six courses in each specialist area. Core courses include introductory content as well as teaching assistant, counseling and career-vocational methods, techniques for working with parents and an issues course. The six additional courses for each credential area include more specialized content for teaching learning or severely handicapped students as well as intensive supervised fieldwork experiences. A list of competencies accompanies each course, and all courses have incorporated practica experiences.

An "Issues" course is the generic core course which provides a framework for a focus upon new rural issues. This is a required course for teachers in the Desert-Mountain Rural Project. In addition, a series of six mini-modules incorporate topics specific to the rural areas being developed and infused into other core courses. Topics and content for these mini-modules are based on a review of the literature on rural special education and results of a comprehensive regional needs survey conducted in collaboration with Desert-Mountain SELPA.

All courses are taught at sites in the desert-mountain region by the full-time CSUSB faculty associated with the project. Each quarter, two courses are offered so that a teacher may elect to complete the credential program in two years. Faculty office hours are maintained weekly in the desert-mountain area in local school districts to provide academic advisement, credential analysis and registration to the rural teachers. Announcements of the program as well as current schedules are distributed to the teachers in the 28 school districts by the SELPA office located in Victorville, California. While the CSUSB credential programs offered at an off-campus site must be consistent with those offered on campus and approved by the Commission on Teacher Credentialing, the Desert-Mountain Rural Training Program offers some innovative features. These include: 1) development and presentation of a regional rural issues course; 2) development and inclusion of rural mini-modules into existing courses; 3) support and coordination of rural demonstration practica sites for observation and field-based training; and 4) utilization of technology for training of current and future rural teachers.

PRACTICA SITES

At minimum, five fieldwork practicum sites are being developed through faculty on-site visitations and consultations with teachers in

the high desert area. Ongoing support to these sites is beneficial to experienced teachers as well as to new and prospective teachers in the region. Several experienced teachers have been identified and are working in partnership with university faculty to further enhance their classroom environment and teaching techniques so that their classrooms can be used for observation and practice experiences by teacher trainees. Since many DMRP participants are already teaching as long-term substitutes, the culminating fieldwork experience often involves faculty supervision and demonstration of competencies within their classroom. Also, observational and direct contact experiences are infused into introductory and content courses to provide teacher trainees with opportunities to observe classrooms which are already beginning to incorporate current trends and best practices in the field into their own rural clasrooms. The benefits of the program component will extend far beyond the duration of federal funding.

TRAINING ACROSS DISTANCE

The situation of special education classrooms having non-credentialed teachers although not in itself novel (Marrs, 1984; Helge, 1984) may be somewhat unique in the rural high desert because of the high number (40-60%) of teachers not being credentialed. A situation such as this in which every classroom holds only a 50/50 chance that the teacher is credentialed calls for dramatic training measures. A novel approach to "pre-service" teacher training which goes beyond university based instruction is needed. In a region where the service area is approximatley 24,000 square miles, the concerns raised in the literature relative to program length, commuting distances, inconvenient course times, travel costs, and professional schedule constraints (Johnson & Amundsen, 1985; Keegan, 1983) are accentuated. In reality, because the majority of teachers may already have their own classrooms, training is not "preservice" in the strictest sense (preservice being defined as individuals being trained in a particular area prior to facing the expectations of using that training professionally), since the teachers in question are already serving students. Therefore the training model must combine the best aspects of preservice and inservice training strategies.

One curriculum model having broad application is the use of modules. Although the use of modules in education is obviously not a new idea as evidenced by the availability of modules on virtually every subject, their use in conjunction with current technology in rural areas is clearly just emerging now. Assuming that the use of current

technology is the most efficient means of providing modularized information considering local needs and logistical constraints, initial efforts must be made to determine the types of hardware available. Once this is known, efforts can be made to train potential users in how to use the technology. The technology emphasis is designed to meet needs across at least 3 areas; 1) the development of strategies for using available hardware when possible, 2) the training of teachers in the use of technology, and 3) the ongoing provision of preservice training and materials using technology available in the service region. This emphasis is designed to insure that current and future teachers will learn and practice skills needed for a) continued involvement with technology and b) learning via technology once the project is completed. Development of technological literacy will focus upon three areas; 1) telecommunication, 2) video, and 3) interactive video technology.

TELECOMMUNICATIONS

Telephones offer the potential of circumventing many of the often cited problems of interaction and feedback between instructor and students which occurs in distance education. Additionally, use of SpecialNet and other telecommunication resources accessible via modem provide the potential of ongoing contact via electronic mail. SpecialNet also gives the user access to a variety of data bases. For example, the American Council on Rural Special Education (ACRES) bulletin board, allows users to keep in touch with rural teaching methods, conferences, referral services, and exemplary practices. It is therefore the goal of the HDAP to facilitate access to telecommunication technology for teachers, as well as provide training to key individuals in local rural districts to disseminate to all interested special education teachers, both inservice and preservice.

VIDEO

There has been a major movement in distance education toward the use of video programming to augment "traditional" instructional strategies. With this movement, however, have come problems related to the video programming. Concerns relate to the quality of what is being "cranked out" (Kressel, 1986), motivation in course development (ELRR, 1986), media expertise (Hezel, 1987), poor decision making in the selection of video materials (Knowles, 1986; Gueulette, 1988), and evaluation of materials (Lane, 1989). In spite of these potential

drawbacks, achievement has been demonstrated to be at least as good when provided via a well constructed video format as by traditional classroom methods (Ritchie & Newby, 1989; Salomom & Clark, 1977; Clark, 1989).

As part of the technology arm of the HDAP, efforts are being made to offer coursework in a video format. Opportunities are being explored to provide instruction either live or on video over cable television. To be worked out are the specific type of interaction between students and instructor (Smeltzer & Davy, 1987; Ritchie & Newby, 1989), and the efficacy of a taped vs. live format. In order to address some of the issues mentioned as problems above, a close relationship is being developed with the Instructional Media Center and Media Technology Graduate program on the California State University campus.

A long term possibility is the use of two way interactive television. This is being explored as a method of addressing concerns relative to interaction and feedback concerns (Howard, 1987). Clearly much work must be completed to facilitate interaction as research indicates this is a perennial problem (Egan, McCleary, Sebastian, & Lacy, 1988).

INTERACTIVE VIDEO

Video information is also being collected for use in an interactive video format. We have begun an innovative project which will use emerging interactive video in teacher training. Development is in the early stages for a program using "Hypercard" an Apple Macintosh product. The text portion of specific educational modules will be developed and installed into the program. Video information will then be collected relative to each specific modular area, translated to the video disc format and the interfaced with a computer to allow computer control of video output. These modules will address specific requisite needs of teachers serving in the rural desert area, as well as the more generic components of preservice teacher preparation.

The final result will be a work station(s) (computer, videodisc player, monitor, software, and cables) which can be placed in remote areas across the desert. Because of the "user friendly" and intuitive nature of the Macintosh computer, students will be able to access information (both text and video) stored in the computer with very little instruction. A simple manual will be all that is required to guide the learners' usage of the technology. As additional indigenous

hardware becomes available, the package (program and video disc) can be duplicated, enabling a wider area to be served. Via these work stations, preservice as well as inservice training can occur in a self directed manner.

In addition to preservice training, the computer program will also be collecting data on users including demographics, performance on pre- and post-tests, and other information specific to rural settings. In this way, the package can be made responsive to students, via ongoing revisions while gaining further insight into rural special education in the California desert.

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